Supplementary Figures:

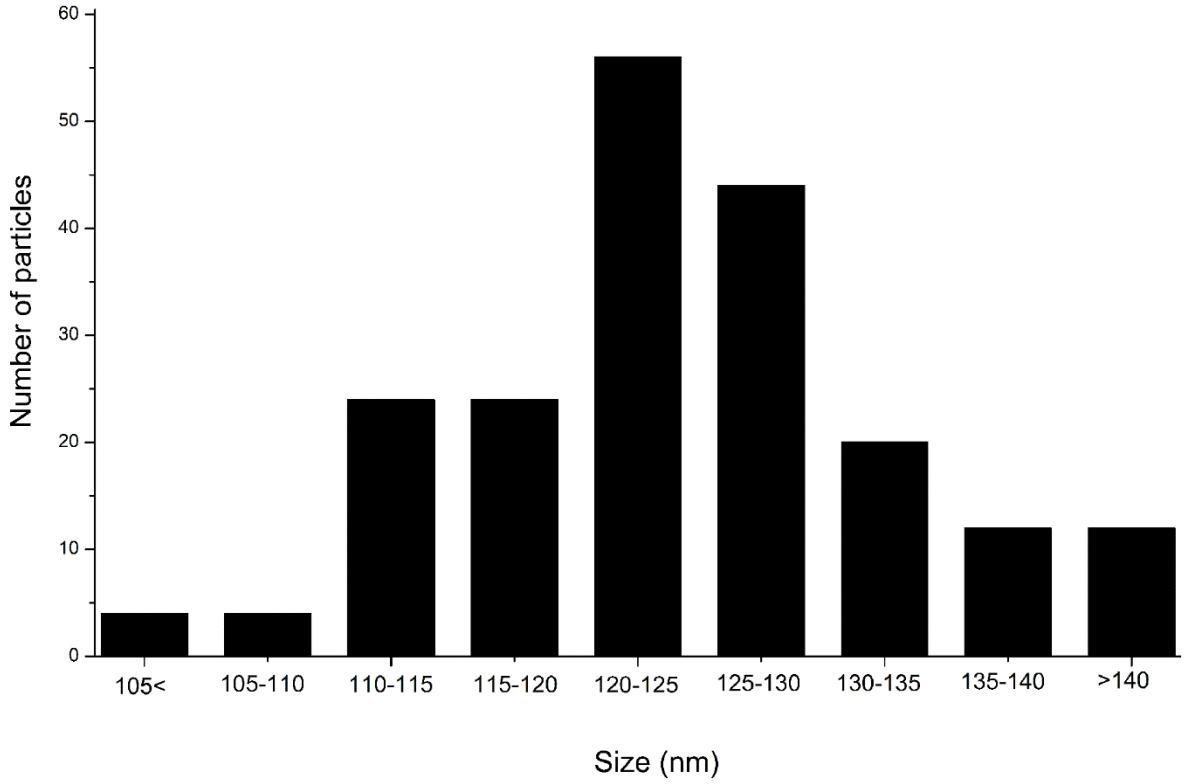

Fig. S1: Particle size distribution of HMSA determined by SEM imaging (total particle number = 200)

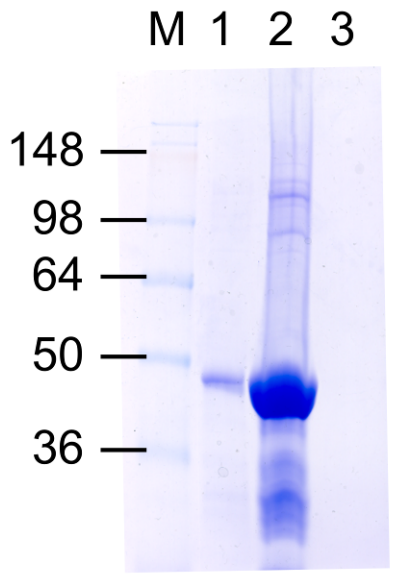

Fig. S2: No desorption of Opti-E2 from HMSA in saline solution.

Desorption of Opti-E2 from HMSA was performed for at 37^{o}C as described in the Materials and Methods. **M**: SeeBlue® Plus2 MW standard; **1**: Opti-E2 control (4 µg) protein for size comparison; **2**: desorbed particle fraction and **3**: desorbed supernatant fraction.

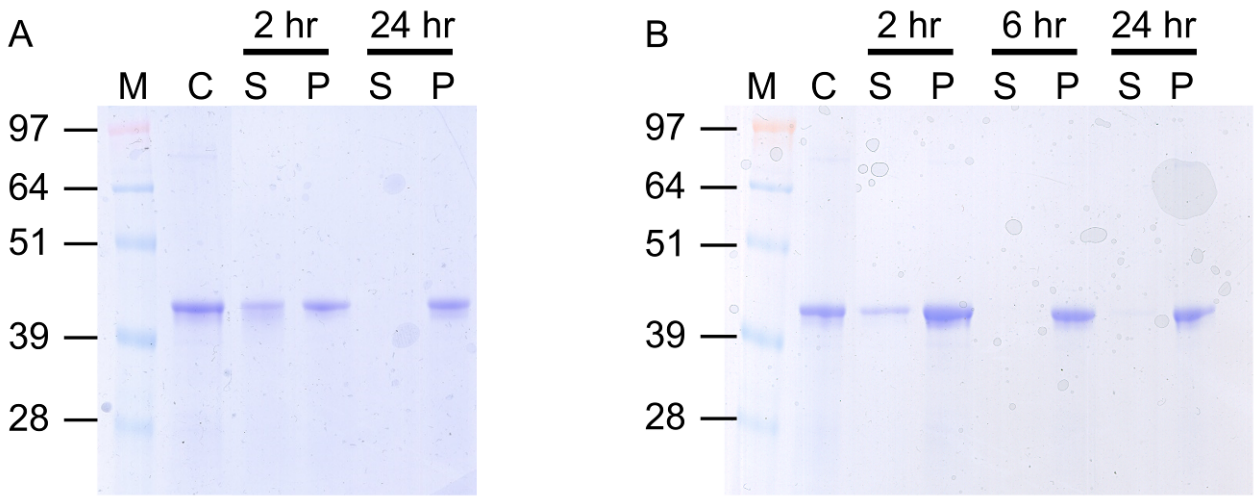

Fig. S3A: Minimal desorption of Opti-E2 from HMSA in 0.1 N HCl.
Desorption of Opti-E2 from HMSA was performed for 24 hr at 37 °C as described in the experimental section. **M**: SeeBlue® Plus2 MW standard; **1**: Opti-E2 control (4 µg) protein for size comparison; **2**: 2 hr desorbed supernatant sample **3**: 2 hr desorbed particle sample, **4**: 20 hr desorbed supernatant sample **5**: 20 hr desorbed particle sample.

Fig. S3B: Minimal desorption of Opti-E2 from HMSA using 0.5% SLS.
Desorption of Opti-E2 from HMSA was performed for a 24 hr at 37°C as described in the experimental section. **M**: SeeBlue® Plus2 MW standard; **1**: Opti-E2 control (4 µg) protein for size comparison; **2**: 2 hr desorbed supernatant sample **3**: 2 hr desorbed particle sample, **4**: 6 hr desorbed supernatant sample **5**: 6 hr desorbed particle sample, **6**: 20 hr desorbed supernatant sample and **7**: 20 hr desorbed particle sample.